DOCUMENT RESUME

ED 263 631 CS 505 084

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TITLE A Structural Reconceptualization of the Organizational Communication Audit, with Application to a State Department of Education.
PUB DATE May 85
NOTE 82p.; Paper presented at the Annual Meeting of the International Communication Association (35th, Honolulu, HI, May 23-27, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Attitude Measures; Communication Problems; *Communication Research; *Employee Attitudes; Employer Employee Relationship; *Job Satisfaction; *Organizational Climate; *Organizational Communication; *Organizational Effectiveness; Self Evaluation (Groups)
IDENTIFIERS *Communication Audits

ABSTRACT

The standard organizational communication audit measures employees' perceptions of and satisfaction with communication in an organization. It does not, however, examine the structural characteristics of an organization, such as centralization or stratification--characteristics that can disclose whether a total communication system is appropriate for the organization it serves. A reconceptualized audit containing structural variables was administered to all employees of a state department of education as the first step in a communication improvement project. The audit surveyed employees' communication both inside the department and with other organizations and publics, relating communication to perceptions of organizational structure, job satisfaction, and satisfaction with the organization's communication system. Results, almost identical for both central office and field employees, showed that the department seemed to be too rigidly structured. Employees perceived it as having highly centralized decision making processes and little autonomy for those outside top management. They also perceived the department as highly stratified, placing barriers between ranks and making interaction difficult between superiors and subordinates in different units. In general, the findings provided support for the inclusion of structural variables in an organizational communication audit, and suggested that the correlation between communication satisfaction and job satisfaction frequently found by researchers is largely spurious. Numerous tables are included. (FL)

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A STRUCTURAL RECONCEPTUALIZATION OF THE ORGANIZATIONAL COMMUNICATION AUDIT, WITH APPLICATION TO A STATE DEPARTMENT OF EDUCATION

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Paper presented to the Public Relations Interest Group
International Communication Association,
Honolulu, Hawaii, May 24-27, 1985

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Abstract

The standard organizational communication audit, as typified by the ICA Communication Audit, measures the perceptions that individual employees have of communication in an organization--mostly interpersonal communication--and their satisfaction with that communication. Most organizational auditors assume that employees who are satisfied with their interpersonal communication will also have higher levels of job satisfaction and productivity--although they do not always state that assumption explicitly.

A public relations researcher, in contrast, would take more of a systems view of organizational communication, examining whether the total communication system is appropriate for the type of organization it serves. Organizations develop structural characteristics--especially centralization, stratification, complexity, and formalization--in response to their environments. In complex, dynamic environments, organizations generally are less rigidly structured than in static, less-complex organizations.

The literature on organizational sociology shows that employee job satisfaction and organizational effectiveness vary with the appropriateness of an organization's structure for its environment. In particular, professional employees will have greatest satisfaction in a less-rigid organization. Such an organization also requires an open, symmetric communication system. Thus, professional employees should have high job satisfaction, be productive, AND be satisfied with the communication system in a less rigid organization. Structure, in other words, explains job satisfaction and communication satisfaction. Job satisfaction and communication satisfaction are only spuriously related to one another.

This paper reconceptualizes the organizational communication audit by adding structural variables to the audit. By doing so, the reconceptualized audit is based on a theoretical relationship that explains why the communication system is or is not effective, rather than providing a profile of the communication system alone with no means of judging whether it is appropriate or not.

The reconceptualized audit contains job satisfaction variables, structural variables, variables to measure Grunig's theory of employee publics, measures of employee communication behaviors, and perceptions of and satisfaction with the communication system.

The audit instrument was administered to all employees of the Maryland State Department of Education, as a first step in a major project to improve the department's communication system. Results

show a strong correlation between organizational structure and both job satisfaction and satisfaction with the communication system. As a result of an inappropriate structure, job satisfaction and communication satisfaction are low. Several employee publics also are identified, whose profiles show the potential effects of communication training and the type of training required to change the communication system.

Although the fields of organizational communication and public relations have much in common, they have produced theories and research so different that an observer unfamiliar with either field would see little commonality. Researchers of organizational communication typically come from departments of speech communication; researchers of public relations more often come from schools of journalism. Both sets of researchers have entered the academic scene recently, although organizational communication has more of a history of research than does public relations. There is much more literature on organizational communication than on public relations, although most of the early research was done in organizational psychology rather than in communications.

Researchers of organizational communication generally have taken an individualistic, psychological, approach to theory building, a reflection of the persuasion, attitude-change paradigm that dominates the field of speech communication. In contrast, public relations researchers--the few that there are--have opted more for a macro-level, sociological, paradigm as the basis for their work.

The reason for the difference is readily apparent. Organizational communication researchers generally want to understand communication between individuals--usually superiors and subordinates--whereas public relations researchers are more interested in communication among groups inside the organization (which they generally call 'internal publics') and between the organization and external publics. Organizational communication researchers, in other words, study interpersonal communication; public relations researchers study intersystem communication.

When they audit the effectiveness of organizational communi-

cation, therefore, organizational communication researchers look for effects on individuals. Public relations researchers, instead, ask whether the communication system of an organization is the most effective possible for the overall organizational system of which it is a part.

When asked what communication contributes to the effectiveness of an organization, organizational communication theorists determine what effects communication has on the job satisfaction and performance of employees. When asked the same question, public relations theorists more often determine whether the communication system helps the organization to manage its interdependence with the environment and to manage conflict among subsystems within the organization.

Although they are probably overstated, I believe the following four presuppositions pervade the field of organizational communication and the communication audit strategies developed in that field.

*Communication is assumed to be a good thing in an organization, something that always should be encouraged.

*Organizational communication is primarily interpersonal communication, not a macro-level system of the organization that is influenced by organizational structure.

*The purpose of communication in an organization is to produce job satisfaction among employees and improve their job performance.

*Perceptions of communication by employees can be used to measure the success of communication in an organization.

In contrast, I believe that:

*Communication can be both functional and dysfunctional for

the organization as a system.

*Interpersonal communication is but one of many types of communication that make up the communication system of an organization.

*The purpose of communication in an organization is to facilitate understanding among subsystems of the organization so that they can better coordinate their behaviors.

*Perceptions of communication are colored by many variables other than actual communication (such as organizational constraints or job satisfaction). Thus variables that require employees to describe rather than evaluate organizational communication provide a more adequate means of evaluating the communication system.

These differences in perspective became apparent when the Maryland State Department of Education asked me to develop a communication audit for a new communication program to be called the "People on the Grow" project. In developing that program, project managers soon realized that existing communication auditing procedures, such as the ICA communication audit, would not provide an adequate basis for evaluating communication within the education system in Maryland. Thus, we developed a new audit instrument. It included structural variables taken from organizational sociology, variables to determine the kinds of publics in the system, and measures of communication behaviors of employees, as well as the traditional measures of job satisfaction and employee perceptions of the communication system found in existing audits.

To understand the reconceptualized audit procedure, we will look first at the People on the Grow Project and then at the theoretical underpinnings of the procedure.

THE "PEOPLE ON THE GROW" PROJECT

In 1983, the Maryland State Department of Education decided to respond to the mounting criticisms of the public education system in the both the state and nation with a major communication program that would help to to improve the system and restore its credibility. The department at first envisioned a media "image" campaign to promote public education. A special communication committee, however, decided to set up what Grunig and Hunt (1984) have called a two-way symmetric system of organizational and public communication.

A two-way symmetric system of communication facilitates dialogue among members of the organization and its environment and strives for greater understanding among those members. It can be contrasted with an asymmetric system of communication, whose purpose is to persuade one group to do what another wishes. In this case, the system was designed to facilitate communication within the State Department of Education (internal communication), within the state educational system (intra-internal communication), and among members of the educational system and external publics (external communication).

The Maryland Department of Education, therefore, needed to audit the existing communication system in the education system to determine how to facilitate all three kinds of communication and to determine whether communication training would be necessary to encourage education employees in the state to communicate more among themselves and with public and to communicate more effectively. The department needed to know how much employees were communicating, what they were communicating about, the channels they

were using for communication, and their receptiveness to communication training (communication about communication). In addition, the department wanted to know the levels of job satisfaction and communication satisfaction among employees and how these variables were affected by or affected communication behaviors.

Two audits have been conducted to date, one of the department's central-office staff in Baltimore and one of field employees working in the department's divisions of vocational rehabilitation and vocational-technical education for corrections. Each study audited both communication satisfaction and job satisfaction, which are standard components of most communication audits. However, this research went further by looking for explanations for communication and job satisfaction.

Simply measuring communication and job satisfaction cannot suggest how to improve either. Organizational sociologists such as Hage (1980: 293-320) have argued that job satisfaction results when an organization has a structure that is appropriate for its employees. In particular, complex organizations with complex environments generally employ specialists who require autonomy to do their work. Without autonomy they become dissatisfied with their work. Less complex organizations in simple environments employ fewer specialists and instead hire employees who need less autonomy in their work. For them, job satisfaction depends more on interpersonal relationships than on autonomy.

Autonomy, therefore, is the key to job satisfaction. The amount of autonomy an employee has depends on an organization's system of constraints, which makes up the "structure" of an organization. The structural framework connects employees and restricts

their behavior so that the organization functions as a single system. Rigid structures can be used to coordinate employee behaviors with relatively little need for communication except for relational communication. With a less-rigid structure, however, the subsystems of the organization cannot be coordinated without communication.

Organizational structure consists of a few variables that managers can change to improve communication, job satisfaction, and organizational effectiveness (see, e.g., Hage 1980 or Robbins 1983). There is no one best organizational structure, however. Which structure is best depends on the number of professionals, as opposed to support staff, employed by the organization and by the complexity and instability of the organization's environment. Generally, the more education and professionalism required of employees, the less rigid should be the organization's structure. Similarly, rigid structures restrict the ability of an organization to communicate with and cooperate with other organizations and publics in a complex, unstable environment.

The characteristics of the internal and external environments of the Maryland State Department of Education suggested that a rigid structure was not appropriate for the department. Except for support staff, most employees are highly educated professionals. In addition, the external environment for education today appears to be highly complex and unstable.

Discussions with department personnel suggested that the structure was not appropriate for the organization's personnel and environment. We could not understand and explain the job satisfaction and communication behaviors of employees, therefore, unless we related these variables to the structural characteristics of the

organization. This study, therefore, measured a number of variables related to organizational structure, communication behavior, communication satisfaction, and job satisfaction, as well as the demographic characteristics of MSDE employees. It used several multivariate statistical techniques to develop indices of these five sets of characteristics and to relate the characteristics to each other. The result is a detailed profile of the department's employees and structure and suggestions for improving the organization's communication system.

In addition to developing this profile of the department's communication system, we also used the audit procedure to identify internal publics. This profile of internal publics made it possible to determine which employees would be most likely to communicate both inside and outside the organization about educational issues and which would be most likely to respond to communication training.

METHODS

A detailed questionnaire consisting of 163 questions was developed using questions similar to those used in Grunig's studies of the communication behavior of publics, job satisfaction and communication audits developed by the International Communication Association and the American Telephone & Telegraph Company, sociological studies of organizational structure, and standard demographic questions. One final open-end question also allowed employees to say anything they wished about their jobs and about the department, its structure, and its communication system.

All employees of the department were asked to complete the questionnaire, resulting in 484 completed questionnaires for the

central-office staff and 541 for the field staff. The respondents placed their answers on scanable answer sheets, and the results were entered into the Univac 1100/80 computer system at the University of Maryland, College Park. All statistical computations were done using the Statistical Package for the Social Sciences.

Each question measured a theoretical concept defined by communication or organization theory. Questions were ordered in a way that would gain the initial interest of respondents but discourage a 'response set'--responding in a fixed manner to questions measuring different concepts. The theory behind each set of questions and the statistical procedures used will be explained as each set of variables is explained.

The results of the questions measuring employee satisfaction with their jobs will be presented first. Job satisfaction variables then will be related to organizational structure and demographic variables, in an attempt to explain the level of satisfaction found. Then variables used to measure communication behaviors, to identify publics, and to measure communication satisfaction will be discussed and related to the other variables.

JOB SATISFACTION

Nine questions measured employees' satisfaction with their individual jobs as well as with salary and benefits, working conditions, and with the way the department handles promotions, human relations, employee recognition, and resources and skills. Respondents used a five-point scale, ranging from highly agree to highly disagree to indicate their agreement with statements such as 'On the whole, my job is interesting and challenging.'

These nine variables were correlated and factor analyzed to

detect major dimensions of satisfaction that might run through the nine variables. Table 1 shows the mean scores on each of the nine job satisfaction variables as well as the results of the factor analysis of these nine variables for both the central-office and field staffs. The results are almost exactly the same for both populations of employees. On a 5-point scale, a mean score of 3.00 or more would indicate a positive score on a variable and a mean of less than 3.00 a negative score. Thus, Table 1 shows a high level of satisfaction on the first two variables: 'the job being interesting and challenging' and 'looking forward to coming to work almost every day.' Central-office employees were slightly more satisfied than field employees on these two variables, however. Table 1 also shows that employees are aware of resources and skills available to them in the organization. And they are evenly divided in their satisfaction with general working conditions.

Each of the other variables, however, shows that MSDE employees are quite dissatisfied. Each of these variables seems to measure employee satisfaction with their relationship with the overall organization, whereas the first two variables seem to measure individual job satisfaction. MSDE employees are particularly dissat-

TABLE 1
Means, Factor Loadings, and Communalities
of Job Satisfaction Variables

Variable	Mean (5-point Scale)		Organization Satisfaction Factor		Individual Satisfaction Factor		Communality	
	Central Office	Field	Central Office	Field	Central Office	Field	Central Office	Field
On the whole, my job is challenging and interesting....	3.92	3.79	.16	.13	.73	.79	.56	.63
I look forward to coming to work almost very day....	3.43	3.34	.32	.34	.81	.77	.77	.55
I feel as though I have a real chance to get ahead in this organization.....	2.20	2.01	.66	.57	.28	.32	.51	.43
The best qualified people are usually chosen for promotion in this organization.....	2.39	2.17	.72	.67	.16	.15	.55	.47
I am satisfied with my pay and benefits	1.99	1.89	.39	.30	.12	.15	.17	.29
My organization has a genuine concern for the welfare of its employees.....	2.39	2.34	.81	.79	.16	.18	.68	.50
I am aware of resources and skills available in this organization that can assist me in doing my job....	3.35	3.47	.39	.32	.23	.30	.21	.19
I am satisfied with my day-to-day working conditions.	2.99	3.04	.59	.50	.40	.36	.51	.38
I am satisfied with the recognition I receive for good performance in my job.	2.89	2.76	.61	.61	.26	.30	.44	.41
Percentage of total variance explained by each factor.....			46%	44%	13%	17%		

isfied with pay and benefits, their chances for getting ahead in the organization, the fairness of promotions, and the organization's concern for the welfare of its employees.

The factor analysis showed that most of these nine variables correlated highly with each other and clustered on two factors. Communalities were also high for all variables except satisfaction with pay and benefits and awareness of resources. The high communalities in Table 1 suggest that the nine measures of satisfaction can be grouped satisfactorily into two major dimensions. Dissatisfaction with pay and benefits seems to be almost universal in the department, however, and therefore it did not correlate highly with the other satisfaction variables. Likewise, awareness of resources was generally high and not strongly related to the other satisfaction variables.

In the factor analysis, all nine variables had positive, and generally high, loadings on both of the two factors that were significant (eigen value greater than 1.0). However, the two variables measuring satisfaction with individual rather than organizational aspects of a job--how interesting the job is and looking forward to coming to work--loaded most highly on the second factor. Thus, the factor analysis seems to have separated the individual from the organizational aspects of job satisfaction and provided a factor to measure each of these dimensions.

If we look again at the individual means of the variables that make up these two factors, we can see that, on the average, MSDE employees are interested and challenged by their individual jobs but dissatisfied with the internal environment of the organization in which they must do their work.

TABLE 2
Correlations of Job Satisfaction Factors
With Demographic Variables

Demographic Variable	Individual Satisfaction		Organizational Satisfaction	
	Central Office	Field	Central Office	Field
Years working in education	.27	.13	-.15	-.09
Years working in MSDE	.14	.11	-.17	-.12
Years working in present job	.13	.05*	-.17	-.11
Position in hierarchy	.18	.18	.07*	.13
Age	.25	.20	-.07*	.03*
Education	.25	.19	-.11	-.02*
Sex (female = positive score)	-.18	-.13	-.06*	-.01*
Race (black = positive score)/1	-.11	-.01*	-.02*	.09
Disabled	.03*	-.09	.07*	.01*

1/Hispanics, Asians, and Native Americans eliminated from correlations because of small numbers.

*Not signficant at $p<.05$.

The two job satisfaction factors then were correlated with demographic variables to determine if satisfaction at both the individual and organizational level was more common in certain demographic groups. Generally, the correlations were low, and they were similar for the central-office and field staffs. For satisfaction with the individual job, the correlations show that employees who are older and who have more education, more years working in the field of education, and a management position--probably those with the most interesting jobs--generally are more satisfied with their individual jobs. Female and black employees are somewhat less satisfied with their individual jobs than are males and whites, although the correlations are small.

At the organizational level, however, most of the correlations

are small or insignificant, suggesting that dissatisfaction cuts across all demographic categories. There is a tendency for employees who have worked the longest in education and in MSDE to be most dissatisfied with their relationship with the organization. The highest management people are slightly more satisfied, but the correlation is significant only for the field staff.

As a final step in looking at job satisfaction, the two variables that did not correlate well with the two factors--satisfaction with salary and benefits and awareness of resources and skills available to employees--were correlated separately with the demographic variables. Both variables correlated at low levels with all demographic variables, suggesting that disatisfaction with salary and benefits cuts across all categories and that most demographic groups are aware of the resources available to them.

Although neither of the two factors of job satisfaction correlated strongly with an employee's position in the department hierarchy, some significant differences in the four ranks appeared when a mean score on the two factors was computed for the four ranks. Table 3 shows that individual job satisfaction for the central-office staff increased progressively for each job rank but that it was much higher for top management than for the other three groups. Likewise, top management at the central office has even greater organizational job satisfaction than do the other ranks, but dissatisfaction with the organization is highest in the middle ranks--first line supervisors and middle management--and above average for the support staff.

Middle management people on the field staff, however, were more satisfied than were middle-management people at the central

office--at levels nearly equal to the satisfaction of top management people. Support staff members at the field level were especially dissatified with their individual jobs, and both support staff and first-line supervisors again were dissatisfield with the organizaton.

In summary, these measures of job satisfaction show that most MSDE employees enjoy their work, especially if they are more educated, older, male, and work in managerial ranks of the organization. On the other hand, employees are dissatisfied with their pay

TABLE 3

Mean Scores on Individual and Organizational Job Satisfaction Factors for Four Levels In the Department Hierarchy/1

Position	Individual Satisfaction		Organizational Satisfaction	
	Central Office	Field	Central Office	Field
Support Staff	.159	-.217	.064	-.076
First Line Supervisors	.064	.100	-.116	-.065
Middle Management	.117	.308	-.109	.564
Top Management	.467	.311	.747	.748
F	5.53**	5.81**	6.40**	5.42**

*P<.05
**P<.01

1/ Scores are factor scores expressed in standardized Z-scores, which have a mean of 0 and a standard deviation of 1.0.

and benefits at all levels and groups of the organization. They also dislike their relationship with the organization, unless they are found in top management positions. We look next to organizational structure, therefore, for an explanation of these satisfaction levels.

STRUCTURAL CHARACTERISTICS OF THE ORGANIZATION

Organizational sociologists have conceptualized four major concepts of organizational structure (see, e.g, Robbins 1983 or Grunig & Hunt 1984: 99-101):

*Centralization--the extent to which decision making is concentrated at the top of the organizational hierarchy. The more an organization is centralized, the greater the constraints on employees outside top management and the less autonomy they have to make their own decisions.

*Stratification--the extent to which an organization makes it clear who are its higher-level employees and who are its lower-level employees. Stratified organizations limit interaction between employees at different ranks and make it difficult to move from lower to higher ranks. Stratified organizations also clearly distinguish the prestige and pay of higher-level employees and provide higher employees such perquisites as private offices, executive dining rooms, and wooden desks to set them apart.

*Formalization--the extent to which an organization follows rules and regulations. Generally, rules, charts, and procedures discourage innovation and autonomy in an organization, although formalized procedures have been found to increase employee satisfaction when they do not reduce autonomy because the procedures clarify what is expected of employees.

*Complexity--the extent to which an organization has educated, professionalized employees who fill specialist roles.

Organizational research shows that rigidly structured organizations are high on centralization, stratification, and formal-

ization and low on complexity--although formalization can also be high in less-rigidly structured organizations if it does not increase centralization. In addition, organizational research shows that employees generally are less satisfied with their jobs in rigidly structured organizations, especially if they are highly educated professionals.

In this study, two questions were used to measure each of the four structural variables. For centralization, stratification, and formalization, employees were asked their perceptions of the total structure of MSDE. For complexity, however, employees were asked to rate the complexity of their individual jobs rather than the complexity of the entire organization.

We can look first at the complexity variables in Table 4 to determine whether MSDE is a complex organization as expected. The answer at first appears to be mixed. The mean score on the amount of education required for jobs in MSDE was below the midpoint of the five-point scale for both the central office and field staffs. The mean score on the extent to which the job was unpredictable and constantly changing was slightly above the midpoint for the central office and slightly below for the field staff.

However, the frequencies for each of the five categories of the two questions shows two modal (most frequent) responses: high school education or less required for the job or a Master's degree required in the central office and high school education or a bachelor's degree for the field staff. These responses show that MSDE hires professionals for complex jobs and nonprofessionals for less complex support jobs. Responses to the 'routineness vs. unpredictability' question fit a normal distribution for both groups,

although there were more responses on the unpredictable side of the scale, suggesting that MSDE is a complex organization, at least for the professional staff.

TABLE 4
Mean Scores on Nine Structural Variables Measured for MSDE and Correlations Between Variables Measuring the Same Concept

Variable	Central Office Mean	Central Office Correlation	Field Staff Mean	Field Staff Correlation
	(3-point scale)			
Centralization:				
Decision making limited to top administrators	2.30		2.38	
		-.19		-.12
Autonomy in making decisions in employee's own job	1.85		1.84	
Stratification:				
Clear and recognized differences between superiors and subordinates	2.45		2.27	
		.31		.18
Difficulty of mobility from lower to higher ranks	2.56		2.54	
Formalization:				
Percentage of rules and procedures specified in writing	2.05		2.37	
		.18		.23
Extent of supervision to ensure compliance with rules and procedures	1.92		1.96	
Complexity:	(5-pt. Scale)			
Minimum amount of education required for employee's job	2.72		2.36	
		.31		.33
Extent to which employee's job is constantly changing and unpredictable	3.16		2.78	

The centralization and stratification variables show MSDE to be a relatively centralized and, especially, stratified organization. The mean scores for formalization were at the middle of the scale, however. In total, these variables do not suggest that MSDE

is a highly rigid organization, but they do suggest that it is structured more rigidly than the ideal for a complex organization.

When the structural variables are correlated with other variables, however, we begin to get a clearer picture of the organizational structure of MSDE. To reduce the quantity of data, the two questions measuring each concept were summed into a single index. Table 4 shows that the two questions used to measure each of the structural concepts correlate moderately and thus make up adequate indices, although the correlation between is two centralization questions is lower, especially for the field staff.

These indices of centralization, stratification, formalization, and complexity were correlated with the demographic variables to see if perceptions of organizational structure varied among different kinds of employees. There were no significant correlations with centralization and formalization for either the central office or field staffs.

Among the field staff, there were small positive correlations between stratification, years in education (.11), and years in the present job (.10). For the central-offie staff, stratification correlated with a few more variables, although those correlations were also small: years in education (.14), years in MSDE (.15), years in the present job (.11), age (.11), female sex (.14), and being disabled (.12). These correlations support the idea that MSDE is stratified, because people who know MSDE best--those who have worked there the longest--are most likely to say it is stratified. In addition, women and disabled people--in the central office--are somewhat more likely than other employees to say the MSDE is stratified, probably because they feel they are the isolated

employees.

The complexity of the job, as would be expected, increased with greater education, greater longevity in the organization, and a higher level in the hierarchy--for both the central-office and field staffs. Complexity correlated .78 and .71 with education for the central and field staffs, .54 and .48 with position in the hierarchy, .55 and .16 with years spent working in education, .17 and .12 with years in MSDE, and .24 and .11 with age. It also correlated negatively (-.35 and -.30) with female sex, probably because of the large number of women in support staff jobs.

Table 5 next shows that top management employees in the central office essentially are myopic about the extent to which MSDE is rigidly structured. The field staff perceives the structure of MSDE somewhat differently, however.

Top managers in the central office are much less likely than employees in lower ranks of the cetral office to say that the department is centralized and stratified. Table 5 also shows, however, that middle level employees in the central office are most likely to perceive MSDE as highly centralized and stratified. Recall that they also were the central-office employees with the lowest satisfaction with their relationship to the organization. Table 5 showed a different pattern for formalization and complexity in the central office: both variables increased as the level of the hierarchy increased.

Table 5 suggests that the field staff perceives MSDE as slightly less rigidly structured than does the central staff: less centralized and stratified. The field staff also sees MSDE as more formalized and less complex. There are also few differences among

ranks, although middle management in the field perceives less centralization than do the other ranks. Middle management also perceives its jobs as the most complex, whereas top management in the field sees its jobs as much less complex than does top management in the central office.

TABLE 5
Mean Scores of Four Structural Variables
For Five Levels in the Organizational Hierarchy

	Centralization (Scales = 2-6)		Stratification (Scales = 2-6)		Formalization		Complexity (Scale = 2-10)	
Position	Central Office	Field	Central Office	Field	Central Office	Field	Central Office	Field
MSDE Mean	4.64	4.58	5.01	4.81	3.98	4.34	5.82	5.11
Support staff	4.54	4.67	5.04	4.80	4.07	4.21	4.47	3.67
First-Line Supervisors	4.75	4.58	5.09	4.82	3.81	4.32	6.69	5.91
Middle Management	4.78	3.80	5.02	4.73	4.17	4.53	7.17	6.20
Top Management	4.32	4.54	4.32	4.75	4.21	4.63	7.21	4.75
	1.08	3.28 (*)	4.86 (**)	0.07	3.38 (*)	1.30	95.5 (**)	110.33 (**)

*p<.05
**p<.01

Table 6 shows the correlations between the four structural variables and the two job satisfaction factors identified in the previous section. The extent to which an employee perceives MSDE to be both centralized and stratified correlated negatively with both individual and organizational job satisfaction. The correlation with organizational job satisfaction is much higher, however, indicating that excessive centralization and stratification in MSDE explain the generally low level of satisfaction that employees have with the organization.

Table 6 shows a positive correlation between formalization and organizational job satisfaction for both central and field staffs and with both individual and organizational job satisfaction for the field staff. Apparently, dissatisfied employees perceive a lack of formal rules and regulations in the departmentment--indicating that formalization improves satisfaction without leading to centralization, which decreases satisfaction.

TABLE 6
Correlations of Structural Variables
With Individual and Organizational Job Satisfaction

	Individual Job Satisfaction		Organizational Job Satisfaction	
Structural Variable	Central Office	Field	Central Office	Field
Centralization	-.26	-.20	-.42	-.31
Stratification	-.14	-.14	-.47	-.36
Formalization	.01*	.24	.22	.24
Complexity	.35	.32	-.13	-.03*

*Not significant at level of $p<.05$.

Finally, Table 6 shows that complexity of the job explains individual job satisfaction to a large extent: the more complex the job the more satisfaction it brings.

The results thus far indicate that excessive centralization and stratification in MSDE explain the high level of employee dissatisfaction with the department. We turn then to the relationships between organizational structure and satisfaction and communication inside and outside MSDE.

COMMUNICATION BEHAVIORS AND PUBLICS

A communication program such as People on the Grow cannot be

aimed at a single audience in an organization. Employees of an organization communicate in different ways and about different things. Information that some employees eagerly seek out may be irrelevant to others. One kind of communication training may be appropriate for some employees, but another kind may be required for others. A communication program may have effects for some employees but be ineffective for others.

In 15 years of research, I have developed a theory of communication behavior that can be used to identify publics by measuring their perceptions of different issues and their communication behaviors related to those issues. (For an overview of this theory see Grunig & Hunt (1985: Chapter 7) or Grunig (1983).) This situational theory of communication served as the major conceptual framework for auditing communication in this study.

The situational theory had its original roots in John Dewey's theories of inquiry and of publics. Dewey argued that people both think and inquire--seek information--when they recognize problems. Dewey also argued that publics form when people or organizations have consequences on other people. To become a public, according to Dewey, the people affected by these consequences must recognize the consequences as a problem and organize with other people to do something about the consequences. Thus, Dewey's thinking suggested that problem recognition leads to communication behavior and that people who recognize the same problems and communicate in similar ways can be called members of a public.

It is important to recognize, however, that people communicate about specific issues, or situations, and that publics develop around specific issues. People do not communicate in the same way

about all issues, and different issues bring about different sets of publics. To audit employee communication behaviors and to group employees into publics, therefore, the researcher must first identify issues that are important to employees or about which the organization would like employees to communicate.

For this study, 20 issues were chosen to identify communication behaviors and employee publics in MSDE. These issues fit into three general categories:

*Current educational issues--including national, state, and local policies; student performance; and innovative ideas in education originating from local school systems, research, educational commissions, new technology, or by employees themselves.

*Communication situations--internal to MSDE, with external noneducation publics, and within the educational community.

*Job-related issues--including salary and benefits, working conditions, management decisions that affect employees' jobs, and achievement in the job.

These situations reflect the People on the Grow project's interest in stimulating employee interest in communicating with other employees, with external publics, and with publics outside MSDE but within the education community; with stimulating employees to actively seek and give information about educational issues; and with encouraging employees and administrators to communicate about their jobs.

The Grunig theory of communication behavior states that two dependent variables (two kinds of communication behavior) can be explained by three independent variables (perceptions that people have of these situations). The two communication behaviors (the

dependent variables) include:

*Information seeking (active communication behavior). People who seek information communicate actively. They look for information relevant to a situation, try to use the information to understand the situation, and frequently use the information to do something about the situation.

*Information processing (passive communication behavior). People who communicate passively do not search for information related to a situation. They will often process information, however, if it comes to them with little or no effort on their part--such as from a television commercial sandwiched into an entertainment program or while reading a memo from management to fill time while riding the bus home from work. People exert less effort in processing information than when they seek it; thus information generally has fewer effects on passively communicating publics than on actively communicating publics.

Employees communicating in these two different ways about an issue or issues require different kinds of communication programs. Actively communicating employees require more information related to issues about which they are concerned than passively communicating employees and will seek information from management as well as from other sources. They also actively give information about the issue to other employees and to people outside the organization.

Passively communicating employees, however, will only communicate about an issue if they are consistently given information without having to exert much effort to get the information. Even then, they will retain only part of the information and do little to make sense of it. Communication training sometimes can be used,

however, to raise the level of problem recognition and perceived involvement of passive publics and thus to change their communication behavior from passive to active.

The two kinds of communication behavior can be identified by measuring each of three independent variables that stimulate either active or passive communication, or both. These three independent variables include:

*Problem recognition. This variable is a direct extension of Dewey's concept of the conditions necessary for thinking and inquiry. People generally do not stop to think and inquire about a situation unless they perceive that something is problematic about --something is missing in--the situation. Problem recognition increases both information seeking and processing. People who recognize a problem seek information because they need it to understand the situation and to plan their behavior in the situation. People who recognize a problem also are more likely to pay attention to--and thus process--information that comes to them with little effort on their part.

*Constraint recognition. This variable represents the extent to which people perceive that there are constraints--or obstacles--in a situation that limit their freedom to plan their own behavior. A high level of constraint recognition lessens the likelihood that people will seek information about a situation or pay attention to and process information that comes to them randomly. Since organizational structure consists of a system of constraints, the situational theory predicts that employees are less likely to communicate in a highly structured organization than in a less-structured organization because the constraints in the highly

structured organization would discourage communication.

*Level of involvement. Level of involvement represents the extent to which people connect themselves with a situation. People who perceive themselves as involved in a situation will be likely to seek information actively because their own behavior is involved and they need information to help plan that behavior. People who perceive a strong involvement in a situation generally also have high problem recognition and reduce their constraint recognition--if it is high--by organizing with others to do something about a situation. Thus, high involvement usually leads to active communication behavior, although there can be involved people who 'don't care' and thus don't think about a situation that involves them.

Level of involvement stimulates active communication behavior; but unlike problem recognition and constraint recognition, it neither encourages nor discourages passive communication behavior. People are just as likely to process information about situations that do not involve them as they are to process information about situations that do involve them. Thus, a high level of involvement generally means people will communicate actively rather than passively.

These five concepts have been used in a number of studies to identify the publics that develop from the set of issues measured in the study--such as the 20 educational issues used here. Problem recognition has been measured by asking survey respondents how often they 'stop to think' about each of the issues, constraint recognition by asking whether they could 'do anything personally that would make a difference in the way the issues are handled,'

and level of involvement by asking whether they "see a connection between themselves, personally, and each of the issues."

In this study, we measured information processing by having respondents estimate how likely they would be to process the information in 14 hypothetical articles that might appear in an MSDE newsletter. Each of the hypothetical articles fit one of the 20 issues used to measure the three independent variables. To reduce the length of the questionnaire, the titles fit only 14 of the 20 situations, although they were evenly distributed among the three categories of issues--educational issues, job-related situations, and communication issues. Respondents were asked whether they would "read the full story immediately, put the story aside to read carefully when they have time, skim it briefly, or not to read it at all.

We measured information seeking with a question that asked how much effort respondents would expend to order a publication from a government education agency or education association. Again 14 publication titles were chosen to match the issues used in the other questions. Respondents were asked if they would be "very likely, somewhat likely, not very likely, or not at all likely to send for the publication."

In addition to these direct measures of information seeking and processing, respondents were asked how often they used each of 21 sources of information or communication contacts, such as MSDE newsletters, daily newspapers, memos, subordinates, coworkers, supervisors, parents of school children, or leaders of community organizations.

We then identified MSDE internal publics in a three-step pro-

cess. First, we factor analyzed the scores on the 20 issues separately for each of the five variables in the theory--problem recognition, constraint recognition, level of involvement, information seeking and information processing--to group the issues into a smaller number of situations that people perceived in a similar fashion. We also factor analyzed the responses to the question about use of communication sources and contacts to reduce them to a smaller number of similar sources.

Second, we correlated the problem recognition, constraint recognition, and level of involvement factor scores simultaneously with the information processing, information seeking, and communication sources and contacts factor scores using a statistical procedure called canonical correlation. Canonical correlation produces a set of canonical variates that are much like the factors that result from factor analysis, except that the variables distinguish the independent variables--perceptions of the situation--from the dependent varibles--communication behaviors.

Thirdly, we used these canonical variates to place respondents to the questionnaire into employee publics. Each variate described a pattern of communication behaviors. People who scored highly on each of the variates fit closely the definition of 'public' in the Grunig theory--people who recognize and communicate about one or more related issues. These variates, finally, were correlated with the demographic, job satisfaction, and structural variables to help identify the kinds of people who make up each public.

Previous research on other organizations has consistently found four types of publics, and similar publics can be expected to exist in MSDE. These four publics include:

*All-issues publics. These are people who have high involvement and problem recognition and low constraint recognition on all of the issues examined. The communication variables nearly always show that such publics communicate both actively and passively about all of the issues and use most of the communication sources and contacts.

*Apathetic publics. People in an apathetic public are low on problem recognition and involvement and high on constraint recognition for all issues. Thus, they may passively process some information, but generally they communicate little about any of the issues.

*Publics who communicate about a limited number of the issues and for whom high problem recognition and involvement and low constraint recognition is limited to these few issues.

*Involving-issue only publics. People whose perception of the situation--problem recognition, etc.--motivate them to communicate only about situations that involve nearly everyone in the population studied. In employee studies, the situations usually include salary, working conditions, benefits, or similar concerns.

Means and Factor Analyses

Tables 7, 8, and 9 display the mean scores of both the field and central office staffs for each of the 20 issues for problem recognition, constraint recognition, and level of involvement, respectively. They also show the factor scores and communalities of the field staff for each issue on each of the three factors found for each variable. The results of the factor analyses were almost identical for both the field and central office staffs, so the results for the central-office staff are not presented in these tables.

If we look at the mean scores first, we can make some comparison of how MSDE employees perceive the 20 issues. On the 4-point scales used, a mean of 2.5 would be at the midpoint of the scale. For problem recognition, first, we can see that most of the means fall near the midpoint of the scale, indicating that employee scores essentially fit a normal distribution on these variables.

There were a few exceptions, however. Employees were especially likely to stop to think about sharing ideas with people at the same organizational level, communication with supervisors or subordinates, management decisions that affect their jobs, achieving something in their jobs, working conditions, salary and benefits, and innovation in their jobs--all situations that directly involve them personally. These exceptions were true for both the field and central office staffs. Both field and central office staffs are least likely to think about communicating with educators thoughout Maryland--with new ideas originating in local systems and with sharing ideas with educators in other parts of the state. The

TABLE 7
Means, Factor Loadings, and Communalities
For Problem Recognition on 20 Education Issues

Issues	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Sharing ideas with people who work at the same organizational level as you.....	3.39	3.48	.14	.18	.58	.39
Sharing ideas with people who supervise your work or those you supervise.....	3.24	3.40	.11	.12	.74	.59
New ideas originating in local school systems.....	1.89	2.32	.59	.02	.17	.38
Management decisions that affect your job.....	3.28	3.33	.28	.33	.31	.28
How well the public understands education.....	2.55	2.82	.72	.13	.16	.57
National educational issues.	2.41	2.78	.78	.18	.15	.66
State educational issues....	2.65	3.08	.77	.23	.13	.66
Education issues in your local school system.....	2.69	2.83	.73	.20	.03	.58
Achieving something worthwhile in your job.....	3.47	3.68	.33	.50	.30	.45
New ideas originating from research on education.....	2.43	2.74	.70	.15	.22	.56
Recommendations of national commissions studying education.....	2.11	2.52	.73	.07	.17	.56
Working conditions in your job	3.55	3.51	.09	.58	.13	.36
Public participation in schools.....	2.23	2.53	.73	.17	.02	.56
Student performance.....	2.65	2.81	.72	.17	.10	.56
New technology used in education.....	2.68	2.97	.69	.29	.12	.58
Your salary and benefits....	3.62	3.48	.03	.71	-.04	.51

TABLE 7 (continued)
Means, Factor Loadings, and Communalities
For Problem Recognition on 20 Education Issues

Issues	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Making changes to do your job more effectively.....	3.50	3.61	.22	.68	.26	.57
Explaining what you do in your job to the general public...	2.87	2.67	.28	.33	.24	.24
Sharing ideas with educators in other parts of Maryland.....	1.86	2.38	.55	.07	.19	.34
Policy decisions made by the Maryland State Board of Education.....	2.45	2.65	.46	.29	.07	.30
Percentage of variance explained by each factor.....			39%	10%	7%	

field staff also had little interest in recommendations of national commissions on education.

Because the field staff works with rehabilitation and disability problems and not in education per se, it generally had lower scores on the educational issues to which the situational variables were applied and slightly higher scores on the issues that directly related to job conditions.

For constraint recognition, means generally fell more at the ends of the scale than in the middle, indicating either high or low levels of perceived constraint. Both field and central office employees felt the least constrained in situations directly related to their jobs: sharing ideas with coworkers at the same level and with superiors and subordinates, achieving something in their job,

TABLE 8
Means, Factor Loadings, and Communalities
For Constraint Recognition on 20 Education Issues

Issues	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Sharing ideas with people who work at the same organizational level as you.....	2.28	2.12	.17	.06	.67	.48
Sharing ideas with people who supervise your work or those you supervise.....	2.27	2.13	.23	-.01	.67	.50
New ideas originating in local school systems.....	3.35	3.06	.63	.19	.21	.48
Management decisions that affect your job.....	2.81	2.65	.44	.00	.58	.52
How well the public understands education.....	3.04	2.89	.65	.24	.31	.58
National educational issues.	3.42	3.32	.85	.02	.18	.76
State educational issues....	3.28	3.06	.83	.04	.27	.76
Education issues in your local school system.....	3.10	3.01	.70	.15	.24	.57
Achieving something worthwhile in your job.....	2.10	1.96	.17	.30	.68	.59
New ideas originating from research on education.....	3.18	2.94	.63	.26	.30	.56
Recommendations of national commissions studying education	3.44	3.31	.72	.16	.18	.58
Working conditions in your job	2.44	2.50	.27	.07	.73	.61
Public participation in schools.....	3.26	3.10	.65	.38	.15	.59
Student performance.....	3.03	3.03	.54	.56	.20	.64
New technology used in education.....	3.18	2.89	.65	.45	.25	.68
Your salary and benefits....	3.01	3.11	.45	.07	.34	.32

TABLE 8 (continued)
Means, Factor Loadings, and Communalities
For Constraint Recognition on 20 Education Issues

Issues	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff: Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Making changes to do your job more effectively.....	2.18	2.16	.14	.19	.74	.60
Explaining what you do in your job to the general public...	2.47	2.54	.22	.27	.46	.34
Sharing ideas with educators in other parts of Maryland.....	3.17	2.83	.49	.36	.36	.51
Policy decisions made by the Maryland State Board of Education.....	3.37	3.31	.60	.12	.31	.48
Percentage of variance explained by each factor.....			47%	4%	15%	

and innovating in their job. They felt most constrained about dealing with new ideas from local school system; national, state, and local education issues; research on education, national commissions, public participation in schools, their salary and benefits, and policy decisions made by the state board of education.

Employees working in the field, however, generally had higher levels of constraint recognition for the educational issues, because their jobs do not relate to education except in a broad sense. Thus, they feel there is little that they can do about educational issues. Their constraint recognition was slightly lower for the issues related to jobs directly than it was for central office employees.

TABLE 9
Means, Factor Loadings, and Communalities
For Level of Involvement on 20 Education Issues

Issues	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff: Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Sharing ideas with people who work at the same organizational level as you.....	3.28	3.34	.08	.38	.51	.41
Sharing ideas with people who supervise your work or those you supervise.....	3.13	3.23	.10	.47	.47	.46
New ideas originating in local school systems.....	1.76	2.09	.65	.15	.18	.48
Management decisions that affect your job.....	2.73	2.82	.27	.61	.15	.46
How well the public understands education.....	1.99	2.16	.68	.12	.24	.54
National educational issues.	1.75	2.00	.83	.15	.02	.71
State educational issues....	1.99	2.32	.82	.25	.02	.74
Education issues in your local school system.....	2.07	2.13	.73	.22	.10	.60
Achieving something worthwhile in your job.....	3.27	3.35	.18	.63	.41	.60
New ideas originating from research on education.....	1.98	2.24	.76	.15	.16	.64
Recommendations of national commissions studying education	1.78	1.97	.77	.17	.08	.64
Working conditions in your job	3.10	3.12	.17	.79	.15	.68
Public participation in schools.....	1.88	2.06	.80	.12	.13	.67
Student performance.....	2.06	2.16	.71	.14	.18	.56
New technology used in education.....	2.02	2.32	.77	.20	.14	.66
Your salary and benefits....	2.98	2.89	.19	.77	.01	.63
Making changes to do your job more effectively.....	3.15	3.22	.14	.73	.43	.73

TABLE 9 (continued)
Means, Factor Loadings, and Communalities
For Level of Involvement on 20 Education Issues

Issues	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Explaining what you do in your job to the general public...	2.54	2.46	.31	.23	.57	.47
Sharing ideas with educators in other parts of Maryland.....	1.83	2.27	.58	.04	.44	.54
Policy decisions made by the Maryland State Board of Education.....	2.02	2.18	.50	.41	.08	.42
Percentage of variance explained by each factor.....			46%	14%	5%	

The level of involvement means, for both groups of MSDE employees, generally were lower than the problem recognition means, indicating that MSDE employees frequently think about issues that they do not believe involve them personally. However, their perceived level of involvement generally was discouraging low on any situation outside the department, such as sharing ideas with education workers in other parts of the state; national, state, and local education issues; public understanding of education; national commissions; public participation in schools; student performance; or policy decisions made by the State Board of Education. Mean levels of involvement were even lower for field employees than central office employees, again probably because they do not work with educational issues per se.

The means for level of involvement were above the midpoint of the scale only for the situations directly related to employees'

jobs, a pattern that was even more true for the field staff than the central-office staff. These low level of involvement means could have resulted because the large MSDE support staff perceives little involvement with the spectrum of educational and communication issues with which they work indirectly. However, the low involvement scores could also reflect the high centralization and low autonomy indicated in the second part of this report. MSDE employees could feel they have little involvement with the broad educational mission and communication about it, other than the performance of their daily tasks.

In the study of central-office employees, factor analysis yielded three factors with the standard measure of an eigen value greater than 1.0 for each of the three situational variables. A fourth factor resulted for constraint recognition; but its loadings were not meaningful, and a three-factor solution was forced for that variable to make the results compatible with those for the other variables.

For the study of field employees, therefore, a three-factor solution again was forced to make the results comparable. Three factors resulted for level of involvement without forcing the solution. For problem recognition, a fourth factor had an eigen value of 1.003. For constraint recognition, the eigen value of the third factor was only slightly below 1.0 (.973). Thus, the three-factor solution again was a reasonable solution.

In both studies, the dominant factor for each of the three variables represented all of the purely educational issues-- suggesting that employees likely to communicate about any of these issues would communicate about all of them. A second factor had

high loadings only for directly involving job situations--such as management decisions that affect the job, achieving something in the job, working conditions, salary and benefits, and innovation on the job. A third factor showed a pattern of concern for internal communication problems--communication with employees at the same level, with supervisor and subordinates, and, to a lesser extent, with education employees in other parts of Maryland and with the general public. In addition, the job-related variables also generally had high secondary loadings on the internal communication factors.

For the field employees, three of the external and internal variables loaded more highly on the job-related factors for level of involvement and problem recognition than they did for the central-office employees, suggesting that communication is more of a daily part of the job in the field than in the Baltimore office. These variables included communication with the general public, with coworkers at the same level, and with superiors and subordinates.

The communalities showed that nearly all of the variance in these 20 issues could be explained by their association with the other issues as represented by the three factors. The only communality that was relatively low was that for communication with the general public, and it was somewhat higher for the field staff for which such communication was more frequent.

The mean scores for the information seeking questions were nearly all well below the midpoint of the 4-point scale (Table 10) for both groups of employees and even lower for field employees than central-office employees. However, low information-seeking

TABLE 10
Means, Factor Loadings, and Communalities
For Information Seeking on 17 Education Issues

Brochure Title	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff: Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
The Effective Supervisor: What You Can Expect from Your Boss.	2.77	2.87	.11	.79	.072	.42
Salaries and Benefits of Teachers and Other Education Workers in 50 States.....	2.64	2.60	.24	.48	.21	.38
Effective Communication among Teachers or Education Workers.	2.10	2.19	.56	.46	.29	.62
Education, Public Policy, and the Reagan Administration...	2.01	2.07	.53	.37	.38	.59
New Ideas in Maryland Schools: Ten Case Studies of Innovation	1.99	2.35	.55	.23	.60	.69
A Consolidated Summary of Reports by National Commissions on Education.....	1.65	2.08	.61	.14	.46	.62
Demography and Disability: A Chartbook for Rehabilitation.	2.58	1.81	.38	.32	.14	.27
A Guide to Student Performance: Why Do Schools Succeed.....	2.14	2.39	.29	.31	.75	.61
What Organizations can do to Make Employees More Satisfied with their Jobs.....	2.95	2.99	.18	.61	.23	.46
New Technology in the Schools: Here's What's Available Now..	2.20	2.46	.41	.33	.41	.62
Handbook of Maryland State Educational Policy.....	2.21	2.48	.50	.32	.21	.42
Toward Understanding: How Educators Can Communicate with the Public.....	1.91	2.19	.72	.28	.25	.62
Team Building and Human Relations in Education.....	2.06	2.31	.73	.35	.18	.66
An Update on the Most Useful Educational Research in the United States.....	1.92	2.25	.67	.15	.47	.67

TABLE 10 (continued)

Means, Factor Loadings, and Communalities
For Information Seeking on 17 Education Issues

Brochure Title	Mean (4-pt. Scale) Field Staff	Mean (4-pt. Scale) Central Office Staff	Factors for Field Staff: Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
EDNET...A Personalized Communication Network for Maryland Educators.....	1.74	2.04	.78	.10	.33	.67
Taxes and Policies...A Comparison of Maryland School Systems...	1.81	2.10	.49	.13	.39	.44
The Innovative Educator...What You can do to Generate Ideas.	2.11	2.33	.60	.29	.35	.58
Percentage of variance explained by each factor.....		51	5%	8%		

scores are not unusual in studies of this kind. Information seeking requires effort, and in real life not many employees actually take the trouble to seek out brochures with titles like those in Table 10. Nevertheless, information seeking does seem quite low for a professional organization like MSDE. Only the brochures directly related to an employee's job had mean scores above the midpoint of the scale.

In the central-office study, factor analysis also yielded three factors with an eigen value greater than 1.0. The third factor had an eigen value of .86 in the field study, although the third factor was forced to make comparison possible. In both studies, these three factors again could be described as an educational-issues factor, a job-related factor, and an internal communication factor. The communalities were generally high, although not as high as in the factor analyses of problem recognition, level of

involvement, and constraint recognition.

In addition, there were many high secondary loadings, especially for the field staff, meaning that this factor analysis did not yield factors that were as pure as those in the other factor analyses. One reason could have been the generally low scores on information seeking, which left less variance in the variables to correlate with the variance in the other variables. In general, therefore, there seemed to be a general information seeking tendency among MSDE employees; those who seek information seek all kinds, with only a slight tendency to differentiate among the three types of situations.

For information processing, most of the mean scores for each of the hypothetical article titles were at about the midpoint of the scale (Table 11), with the means for field employees generally lower than means for the central-office staff. Again, employees rated article titles highly only if they related to personal job situations. These means, like those for information seeking, were relatively low compared to those found in other studies using the same measures--again suggesting a relatively low level of communication by MSDE employees.

Factor analysis again revealed three factors almost identical to those found for the other situational variables. A fourth factor had an eigen value of exactly 1.0 in the central-office study and 1.031 in the field study, but it was not meaningful and the analysis was limited to the three factors. With a few exceptions, the communalities show that the factors account for the variance in the article titles well. However, there again was a pattern of high

TABLE 11
Means, Factor Loadings, and Communalities
For Information Processing on 18 Education Issues

Article Title	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff: Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
Survey shows how workers in education departments in Maryland rate their supervisors..	3.10	3.38	.16	.55	.15	.31
SAT scores up again in '84: Maryland scores tops in region but two points off U.S. math average.....	2.21	2.61	.39	.19	.41	.41
Gov. Harry Hughes seen likely to request less state aid for education that recommended by the Civiletti task force.....	2.74	2.97	.28	.25	.47	.41
Task force releases its proposal for pension reform for Maryland teachers and state employees.	3.42	3.37	.00	.38	.22	.22
Computers in school: What is happening in Maryland.....	2.43	2.73	.60	.14	.10	.39
Salisbury State College management professor tells how better communication with conselors improves individual and organizational performance.....	2.27	2.04	.36	.08	.59	.47
Maryland educators offer equity workshops in 18 local school systems.....	1.81	1.84	.59	.04	.45	.56
Here's what is happening to budgets in Maryland local school districts.....	2.10	2.33	.63	.19	.27	.53
Educational research at the University of Maryland provides tips for better teaching.....	1.92	2.24	.81	.03	.23	.61
Awareness campaign demonstrates that handicapped people have a lot more ability than disability.	3.09	2.62	.12	.17	.53	.32

TABLE 11 (continued)
Means, Factor Loadings, and Communalities
For Information Processing on 18 Education Issues

Article Title	Mean (4-pt. Scale) Field Staff	Central Office Staff	Factors for Field Staff: Educ. Issues Factor	Job-Related Factor	Internal Commun. Factor	Communality
New ideas abound in Maryland schools! here are some you might use.....	2.14	2.54	.74	.19	.18	.57
Workers in Maryland education departments rate their working conditions and job satisfaction.....	3.05	3.33	.20	.71	.08	.40
Public understanding of education essential! What you can do to communicate with the public..	2.18	2.51	.58	.28	.39	.59
MSDE proposes an informal network that would allow educators throughout the state to communicate with other educators sharing common problems.....	2.04	2.49	.59	.17	.37	.53
Teacher groups oppose recommendations of Teacher Quality Reports.....	2.02	2.41	.58	.30	.23	.48
The Reagan administration announces its plans for education in 1984.....	2.71	2.71	.37	.44	.44	.58
After the national commissions.. what the proposals mean in Maryland.....	2.25	2.48	.43	.31	.47	.56
Johns Hopkins productivity expert tells what innovative employees do differently.....	2.44	2.64	.23	.30	.43	.37
Percentage of variance explained by each factor.....			41%	6%	9%	

secondary loadings, especially in the field study--suggesting a single pattern of information processing that is not finely differentiated among the situations.

Table 12, next, moves from these hypothetical measures of the theoretical concepts of information seeking and processing to measures of actual communication behaviors. The table shows the means, for both groups of employees, and factor loadings, for the field staff, for the use of educational media and other internal and external communication sources and contacts.

Most of the means fall near the midpoint of the scale, showing a normal distribution for the use of these communication sources by MSDE employees. Only the use of local newsletters and contacts with parents of school children were much below the midpoint. Especially high were use of daily newspapers, commercial radio and television, memos and letters both sent and received, and communication with subordinates, people in other divisions of the department, and the immediate supervisor.

The means were generally similar for both central-office and field employees, although field employees typically had a lower mean for purely educational media.

Factor analysis yielded five significant factors that were almost identical for both groups of employees. There were substantial secondary loadings throughout the factors and several moderate communalities, indicating that employees mix their use of these communication media and contacts and that the sources and contacts do not fall perfectly into separate categories. However, the five factors do reveal five reasonably distinctive types of communication. Table 12 shows the factor structure for the field employees:

*Vertical internal communication--especially top administrators, middle administrators, division meetings, superiors and sub-

TABLE 12
Means, Factor Loadings, and Communalities for Educational Media, Information Sources, and Communication Contacts

	Mean (4-pt. Scale)		Vertical External			Mass	Horizontal	
	Field	Central-Office	Commun. Factor	Commun. Factor	Memos Factor	Media Factor	Commun. Factor	Commun-ality
MSDE Newsletter	2.23	2.75	.17	.35	.19	.14	-.05	.21
Local school system newsletter.....	1.58	1.85	.01	.54	.11	.06	-.06	.31
Commercial educ. publications...	1.90	2.50	.12	.61	.24	.14	-.09	.48
Daily newspaper	3.08	3.20	.06	.15	.17	.77	-.02	.66
Weekly newspaper.....	2.69	2.60	.02	.20	.15	.69	.02	.54
Commercial radio and TV.....	2.86	3.01	.03	.10	.11	.60	.22	.43
Bulletin boards	2.61	2.61	.02	.23	.33	.25	.12	.24
Memos or letters sent..	2.71	3.20	.21	.21	.69	.17	.13	.61
Memos or letters received.....	3.16	3.40	.21	.07	.72	.20	.17	.63
Subordinates..	2.55	2.85	.23	.13	.46	.09	.23	.35
Coworkers in own office/division	3.41	3.54	.09	.03	.35	-.01	.69	.60
Individuals in other units of the department.	2.98	3.04	.23	.13	.28	-.04	.57	.47
Individuals in other education organizations..	2.14	2.74	.34	.54	.07	.05	.27	.50
Immediate supervisor....	3.29	3.41	.40	.01	.30	.07	.42	.43
Division meetings.....	2.51	2.53	.53	.22	.24	.02	.12	.41

TABLE 12 (continued)
Means, Factor Loadings, and Communalities for Educational Media, Information Sources, and Communication Contacts

	Mean (4-pt. Scale)		Vertical Commun. Factor	External Commun. Factor	Memos Factor	Mass Media Factor	Horizontal Commun. Factor	Communality.
	Field	Central-Office						
Middle-level administrators.	2.45	2.65	.79	.10	.17	.05	.22	.72
Top administrators.	2.06	2.22	.69	.17	.12	.01	.08	.53
The "grapevine"	2.71	2.63	.13	-.02	.00	.14	.32	.14
Parents of school children	1.87	1.98	.08	.61	-.10	.12	.31	.50
Community leaders.....	2.02	2.04	.25	.57	.14	.25	.16	.50
Friends and neighbors.....	2.32	2.34	-.08	.37	-.02	.34	.43	.44
Percentage of variance explained by each factor			10%	28%	8%	7%	6%	

ordinates, and people in other units of the department.

*External communication--especially parents, community leaders, individuals in other school systems, memos and letters sent out, and friends and neighbors; also loading on this factor were the MSDE newsletter, local school newsletters, and educational publications. For the field staff, bulletin boards loaded highly also, suggesting that they may provide external information.

*Memos--memos and letters sent and received loaded extremely highly on this factor; communication with subordinates, coworkers in the same office, and individuals in local school systems (the recipients of the memos and letters) also loaded highly. Bulletin boards loaded highly on this factor for the field staff.

*Mass media--especially daily and weekly newspapers and commercial radio and television.

*Horizontal communication, both internal and internal- external--including coworkers in the same unit, individuals in other units, the grapevine, and parents, community leaders, and friends and neighbors. For the field staff, the immediate supervisor and middle-level management loaded on this factor, suggesting that more symmetric, horizontal communication takes place between superiors and subordinates at the field level.

Canonical Correlation

Now that all of the situational variables have been reduced into major categories represented by factors, we can correlate the factors representing the independent variables--problem recognition, constraint recognition, and level of involvement--with the factors representing the dependent variables--information seeking, information processing, and use of communication media and contacts. All of these variables can be correlated simultaneously using canonical correlation.

Although the factor analyses had produced almost identical factors for both the field and central-office staffs, canonical correlations produced different results for the central-office and field staffs. For the field staff, canonical correlation produced three variates significant at the .05 level or less. It produced four variates from the central-office data, and the first variate described two publics--for a total of five publics. We will look therefore at the results of the canonical correlations first for the central-office staff and then for the field staff.

Employee Publics in the Central Office

The canonical correlation produced four variates significant at the .05 level or less. These four variates seem to describe five kinds of publics among central-office employees; the first variate describes two publics. These five publics can be described as follows:

*The Job Situations Only Public. This public fits the category of an 'involving-issues only public,' with the involving issues being those directly related to employees' jobs. This public can be seen in the correlations in Variate 1. Only for the job-situations factors are problem recognition and level of involvement positive and constraint recognition negative. This public is not likely to communicate, however, even about the job situations. Information processing is barely positively correlated and information seeking is barely negative correlated with the variate (although neither correlation is significant). All other communication correlations are negative. (In other studies, involving-issue publics also have had similar low correlations with communication variables, even those related to the involving issues.)

*The All-Educational-Issues Public. Changing all of the signs of the correlations with Variate 1 (reflecting the variate) reveals a second public that is the opposite of the first public. (Variate 1 distinguishes these two types of publics from one another; one is at the positive end of the variate and the other at the negative end.) When all of the signs are changed, Variate 1 reveals a public high on problem recognition and involvement and low on constraint

TABLE 13
Correlations of Factor Scores with Canonical Variates
Resulting from Canonical Correlation of Situational Variables
For the Central-Office Staff

Independent Variable Factors	Educ. Issues /Job. Sit. Variate	Internal Commun. Variate	Apathetic Variate	Involvement Only Variate
Educational issues:				
Problem recognition	-.91	-.07	-.16	-.29
Constraint recognition	.84	.13	.03	-.33
Level of Involvement	-.83	-.22	.03	.37
Internal communication situations:				
Problem recognition	-.33	.75	-.10	.09
Constraint recognition	-.05	-.69	-.01	.00
Level of involvement	-.19	.69	.01	.22
Job-related situations:				
Problem recognition	.15	.17	-.74	.01
Constraint recognition	-.21	.36	.47	-.07
Level of involvement	.16	.17	-.54	.36
Dependent Variable Factors				
Educational issues:				
Information seeking	-.88	-.09	.18	.34
Information processing	-.76	-.17	-.21	-.30
Internal communication situations:				
Information seeking	-.34	-.03	-.48	.13
Information processing	-.53	-.06	-.01	.37
Job-related situations:				
Information seeking	-.06	.10	-.59	.42
Information processing	.04	.24	-.62	.14
Media, Sources, and Contacts:				
Vertical communication	-.29	.85	.06	-.11
External communication	-.80	-.14	-.18	-.03
Memos and letters	-.27	.38	.19	.05
Mass media	-.21	-.01	-.19	-.35
Horizontal communication	-.05	.20	-.42	-.03
Canonical correlation	.87	.50	.35	.26

recognition for all of the factors except the job-related factors (constraint recognition on the internal communication factor does not correlate, however.) Correlations are also high on all of the communication factors except for the job-related factors, including all of the media and communication sources. This, then, is an all-issues public communicating about nearly all of the issues

studied.

*The Internal Communication Public. The second variate identifies a limited-issues public concerned primarily about internal communication in MSDE, although it has some concern with the job-related situations. The variate does not correlate with the factors measuring information seeking and processing related to internal communication, but it does correlate--logically--with the vertical communication, memos and letters, and horizontal communication factors.

*The Apathetic Public. Variate 3 identifies an apathetic public. Nearly all of the correlations are negative (constraint recognition positive) or small with both the independent perception factors and the dependent communication factors.

*The Involvement-Only Public. The fourth variate identifies a kind of public that has not shown up in previous research. For the independent variables, level of involvement correlates positively with all three factors, whereas the other variables correlate negatively or not at all. This public, in other words feels involved with all of these issues but does not think about them even though it does not feel constrained from doing anything about them. Information seeking, brought on by the high involvement is generally high for all of the issues, but none of the communication sources and contacts correlates positively.

We can determine the relative percentage of MSDE central-office employees in these five kinds of publics by placing each employee into the public for which it has the highest score on the canonical variate. (Public 2 was identified by multiplying the scores on Variate 1 by -1. The Job-Situations-Only Public and the

All-Educational Situations Public were the two dominant publics. The results broke down as follows:

Job-Situations-Only Public	27%
All-Educational-Situations Public	26%
Internal Communication Public	19%
Apathetic Public	15%
Involvement-Only Public	14%

Employee Publics in the Field Staff

The variates for the field staff described only three publics (Table 14). Those three publics include:

*The Educational-Issues/Internal Communication Public. Nearly all of the signs for the first variate were negative, so that these signs were all changed (the variate was reflected) so that the positive side of the variate could be examined rather than the negative. When all of the signs are changed, Variate 1 reveals a public high on problem recognition and involvement and low on constraint recognition for all of the factors except the job-related factors, although level of involvement was positively and constraint recognition negatively correlated with the variate. Correlations are also high with all of the communication factors, including the job-related factors. This, then, is an all-issues public that communicates about nearly all of the issues studied, but especially the issues that will be emphasized in the 'People on the Grow' training program. The highest correlation of all the communication variables was with the external communication factor that resulted from factoring the variables that measure employee's use

of media and communication sources and contacts. The field staff in these two divisions, evidently, communicate frequently with external contacts.

TABLE 14
Correlations of Factor Scores with Canonical Variates Resulting from Canonical Correlation of Situational Variables For the Field Staff

Independent Variable Factors	Educ. Issues/ Intern. Comm. Variate/a	Job Related/ Intern. Comm. Variate	Job Related Variate
Educational issues:			
Problem recognition	.91	-.08	.10
Constraint recognition	-.67	.40	.11
Level of Involvement	.70	-.39	.10
Internal communication situations:			
Problem recognition	.35	.56	.00
Constraint recognition	-.17	-.65	.35
Level of involvement	.41	.49	-.36
Job-related situations:			
Problem recognition	.02	.54	.70
Constraint recognition	-.45	.05	-.27
Level of involvement	.15	.57	.16
Dependent Variable Factors			
Educational issues:			
Information seeking	.68	-.18	-.42
Information processing	.70	-.29	.05
Internal communication situations:			
Information seeking	.32	.37	.20
Information processing	.58	-.02	-.09
Job-related situations:			
Information seeking	.55	-.43	.37
Information processing	.21	.30	.63
Media, Sources, and Contacts:			
Vertical communication	.37	.50	-.39
External communication	.70	-.23	.13
Memos and letters	.24	.51	-.11
Mass media	.18	-.01	.04
Horizontal communication	.18	.00	.03
Canonical correlation	.77	.50	.29

a/This is a reflected variate. The canonical correlation program produced a solution with the opposite signs. They have been changed for both independent and dependent variables to make interpretation easier.

*The Job-Related/Internal Communication Public. The second

variate identifies a limited-issues public concerned primarily about internal communication in MSDE and with the job-related situations. The public identified by this variate feels moderately constrained about the job situations, however. The variate correlates, logically, with the vertical communication and memos and letters factors--both internal arms of communication--but not with external communication. The correlations with information seeking and processing suggest that this public will seek, but not process, information about internal communication and will process, but not seek, information about job situations.

*The Job-Related Situations Only Public. This public fits the category of an 'involving-issues only public,' with the involving issues being those directly related to employees' jobs. This perceptions and communication behaviors of this public can be seen in the correlations in Variate 1. Only for the job-situations factors do the variates correlate highly and positively with problem recognition and level of involvement and negatively with constraint recognition. This public seems to have a slight interest in the educational issues, as indicated by small, positive correlations with problem recognition and level of involvement. However, it feels constrained about doing anything about these issues. As the situational theory predicts, this variate correlates positively with information seeking and, especially, information processing. The public exposes itself only to a small degree to educational media, sources, and contacts. Only external communication correlates positively and significantly. (In other studies, involving-issue publics also have had similar low correlations with communication variables, even those related to the involving issues.)

We can determine the relative percentage of MSDE field employees in these three kinds of publics by placing each employee into the public for which it has the highest score on the canonical variate. The results showed a nearly equal distribution of employees:

Educational Issues/Internal Comunication Public	35%
Job-Related/Internal Communication Public	33%
Job-Relations Issues Public	32%

Correlations of Publics with Demographic Variables and Job Satisfaction

We can better identify these five publics by looking at their demographic characteristics--by correlating each of the canonical variates with the demographic variables. We will look first at these correlations for the central-office staff and then for the field staff.

For the central-office staff, remember that the signs of the first variate must be changed to determine the correlations with the All-Educational-Issues Public. Table 15, therefore, shows that Most of the significant correlations are with the first variate. The All-Educational-Issues Public is most likely to have a managerial job, to have worked more years in education, to be older and more educated, and to be male. The Job-Related Situations Public has the opposite characteristics.

Both the Internal Communication Public and the Apathetic Public tend slightly to have a managerial position, more education, and more years working in education than other employees. The In-

volvement Only Public correlates weakly or not at all with the demographic variables, although there is a very slight tendency for this public to be young, male, black, and in a managerial role.

TABLE 15
Correlations of Demographic Variables of the Central-Office Staff With Canonical Variates Identifying Publics

Demographic Variable	Educ. Issues /Job. Sit. Variate	Internal Commun. Variate	Apathetic Variate	Involvement Only Variate
Years working in education	-.54	.09	.09	-.02*
Years working in MSDE	-.09	.03*	.04*	-.04*
Years in present job	-.11	-.03*	.06*	.00*
Age	-.32	-.01*	.02*	-.13
Education	-.65	.17	.12	.07*
Sex (female = positive correlation)	.18	-.05*	-.10	-.10
Race (black = positive correlation)	-.03*	-.18	-.05*	.09
Disabled	-.06*	-.04*	-.02*	-.05*
Position in hierarchy	-.46	.15	.16	.08

*Not significant at P<.05.

Table 16, then, shows the correlations of the demographic variables with the publics found in the field staff. The correlations in Table 16 generally are low, although most are significant.

They show that members of the educational issues/internal communication public are likely to have a position high in the hierarchy, to be well educated, to be black and somewhat older, and not to have been with MSDE or in the present job a long time. The job-related/internal communication variate correlated with few demographic variables, but the public it identifies is white, educated, and has been in MSDE longer than average. The job-related vriate seems to consist of women lower in the hierarchy who are younger and less educated and who have not been in the job a long time.

TABLE 16
Correlations of Demographic Variables of the Field Staff
With Canonical Variates Indentifying Publics

Demographic Variable	Educ. Issues/ Int. Comm. Variate	Job Related/ Int. Comm. Variate	Job Related Variate
Years working in education	.01*	.08*	-.03*
Years working in MSDE	-.11	.10	-.09
Years in present job	-.10	.00*	-.08
Age	.11	-.13	-.10
Education	.29	.08	-.12
Sex (female = positive correlation)	-.06*	.01*	.20
Race (black = positive correlation)	.16	-.20	.03
Disabled	-.03*	.03*	.08*
Position in hierarchy	.31	.00*	-.18

*Not significant at P<.05.

Mean scores also were computed for each of the canonical variates for the four levels in the hierachy, to supplement the overall correlation with position. For the central-office staff, Table 17 shows that the Job Situations Public is found most among the support staff, while the All-Education-Issues Public can be found among first-line supervisors, middle management, and top management. The Internal Communication Public is found mostly in top management and to a lesser extent in middle management. The Apathetic Public and Involvement Only Public are most likely to be found in top management.

Table 18 provides similar data for the field staff. It shows that the education issues/internal communication public appears more often with each advance in rank among the field staff, but that is most common among top management and middle management. The Job-related/internal communication public did not differ significantly by rank, although it was least common among top management. Finally, the Job-related public was most common among support staff

and declined in importance with each position lower in the hierarchy.

TABLE 17
Mean Scores on Four Canonical Variates Broken Down By Position in the Hierarchy of the Central-Office Staff/1

Position	Educ. Issues /Job. Sit. Variate	Internal Commun. Variate	Apathetic Variate	Involvement Only Variate
MSDE Mean	.014	-.011	-.002	-.016
Support Staff	.622	-.114	-.186	-.064
First Line Supervisors	-.387	-.026	.102	.040
Middle Management	-.589	.142	.078	.079
Top Management	-.500	.544	.432	.318
F	57.16 (P<.01)	3.68 (P<.05)	4.41 (P<.01)	1.27 (n.s)

1/Scores are canonical variate scores expressed in standardized Z-scores, which have a mean of 0 and a standard deviation of 1.0.

TABLE 18
Mean Scores on Four Canonical Variates Broken Down By Position in the Hierarchy of the Field Staff/1

Position	Educ. Issues/ Int. Comm. Variate	Job Related/ Int. Comm. Variate	Job Related Variate
MSDE Mean	-.01	-.01	-.02
Support Staff	-.38	-.08	.16
First Line Supervisors	.19	.04	-.08
Middle Management	.61	-.08	-.61
Top Management	1.04	-.46	-.76
F	16.12 (P<.01)	1.11 (n.s.)	5.22 (P<.01)

1/Scores are canonical variate scores expressed in standardized Z-scores, which have a mean of 0 and a standard deviation of 1.0.

Next, the canonical variates were correlated with Job satisfaction to determine if any of the publics were more satisfied or

dissatisfied with their individual jobs or their relationship with the organization. For the central-office staff, Table 19 shows the All-Educational-Issues Public to have individual job satisfaction and, conversely, for the the Job-Situations-Only Public to be dissatisfied with its individual jobs. The first variate that defines these two publics did not correlate with organizational job satisfaction.

The Internal Communication Variate correlated positively with both individual and organizational job satisfaction, and the Apathethic Variate correlated with neither. However, the Involvement-Only Variate correlated negatively with organizational dissatisfaction--probably showing that it represents managers who have little autonomy.

TABLE 19
Correlations of Individual and Organizational Job Satisfaction Factors With Four Canonical Variates Representing Central-Office Publics

	Educ. Issues /Job. Sit. Variate	Internal Commun. Variate	Apathetic Variate	Involvement Only Variate
Individual Job satisfaction	-.27	.31	.05*	.00*
Organizational Job satisfaction	.05*	.32	.09	-.15

*Not significant at $p<.05$.

Table 20 provides similar data for the field staff. It shows that members of the eductional issues/internal communication public are more satisfied with both their individual jobs and with the way the organization treats them--probably because they tend to be managerial employees. The members of the job-related/internal communication public like their jos but are about as likely as all employees to dislike their treatment by the organization. Finally,

members of the Job-related public have a slight tendency to like their individual jobs but to dislike their treatment by the organization.

TABLE 20
Correlations of Individual and Organizational Job Satisfaction Factors and Structural Variables With Four Canonical Variates Representing Publics in the Field Staff

	Educ. Issues/ Int. Comm. Variate	Job Related/ Int. Comm. Variate	Job Related Variate
Individual Job satisfaction	.34	.21	.13
Organizational Job satisfaction	.25	-.06	-.19
Centralization	-.13	.14	.14
Formalization	.20	.16	-.00*
Stratification	-.07*	-.09	.16
Complexity	.27	.12	-.09

*Not significant at p<.05.

Finally, the canonical variates were correlated with the four structural variables--centralization, stratification, formalization, and complexity--to determine if any of the publics perceive the organizational structure differently. Table 19 includes these results for the central-office staff.

Most of these correlations were not significant. However, the correlations did show that the Internal Communication public sees the organization as less centralized (r=-.32) and stratified (r=-.18) than do other employees. This is a logical relationship, as employees in less constrained jobs will be more interested in communication than those in more constrained jobs.

In addition, the correlations show that members of the All-Educational Issues Public have more complex jobs than members of the Job-Situations-Only Public (r=-59 with Variate 1). Complexity also correlated positively with the Internal Communication

Variate (r=.21) and the Apathetic Variate (r=.11).

For the field staff, Table 20 shows that members of the educational issues/internal communication public see the organization as less centralized and more formalized than other employees and about as stratified. In addition, their jobs are more complex--all variables that show the employees with more autonomy communicate more.

The members of the job-related/internal communication public see MSDE as slightly more centralized and formalized than other employees but slightly more stratified. Their jobs are also slightly more complex. In contrast to these other two publics, members of the job-related public--support staff members not likely to actively communicate except about their jobs--see MSDE as more centralized and stratified than other employees and about as formalized. Their jobs are also slightly less complex.

In summary, in this section we have once again found a split between the professional and support staff of MSDE. The largest number of professional employees, employees with more complex jobs, fit into an all-issues public. Most of the support staff fit into an involving-issues-only public, concerned and communicating only about its day-to-day work climate and not about the broad spectrum of educational issues. As the previous sections showed, professional staff members are more satisfied with the individual aspects of their jobs of their jobs than are support staff members. For the central-office staff, the data show that both groups are dissatisfied with their relationship to the organization.

In addition, for central-office employees some members of the professional staff fit into three additional publics. One group,

which has more autonomy than others, is particularly concerned with internal communication. Another is apathetic about all of the issues studied. Members of a a third group feel that most of the issues involve them although they rarely think about them. Members of this public say they will seek information about the issues although they use few of the communication sources and contacts available to them.

Having identified these publics, we turn next to employee perceptions of the communication system in the department.

EMPLOYEE PERCEPTIONS OF THE COMMUNICATION SYSTEM

Sixteen questions in the questionnaire measured whether employees believed the MSDE communication system to be one-way or two-way and symmetric or asymmetric and how satisfied they were with several aspects of the communication system.

The questions measuring the direction and symmetry of the communication system were based on the two major dimensions of my four "models of public relations" (Grunig 1984). Direction, one-way vs. two-way, distinguishes between communication that flows primarily from source to receiver--in internal communication from management to subordinates--as opposed to communication that can be initiated by both communicating groups and that flows back-and-forth between the people communicating.

Symmetry defines the extent to which effects are balanced. Does management use communication to try to change the attitudes and behavior of subordinates--asymmetric communication? Or does communication work to achieve understanding between the two groups, with changes in attitudes and behavior possible for both groups--symmetric communication? Both asymmetric and symmetric communica-

tion can be either one-way or two-way. In particular, asymmetric communicators can seek feedback--two-way communication--to find out if they are achieving their desired changes in attitudes and behavior.

The remaining questions about the communication system were modeled after standard questions in many communication audits, especially in the audit developed by the International Communication Association.

The mean scores that are substantially above or below the midpoint on the five-point scale used for the communication-perception questions show that both field and central-office employees perceive communication in MSDE to be (Table 21):

*One-way and asymmetric, rather than two-way and symmetric.

*Erratic and difficult to describe.

*Good with supervisors about performance or when things go wrong.

In addition, employees perceive that:

*MSDE as an organization discourages differences of opinion, although supervisors do not.

*They receive enough information to do their jobs adequately.

*They receive more of their instructions orally than in writing.

Although the means are similar, field employees generally had lower means on most variables, meaning that they were even less satisfied with MSDE's communication system than were central-office employees. Field employees, however, seemed to be more satisfied with communication with their supervisor, which probably reflects

greater contact between middle management and subordinates in the field.

These responses show that employees generally are happy with communication with individuals in MSDE but that they do not like the department's total communication system--even more in the field than in the central office. They see it as an asymmetric system that gives them information but discourages them from expressing opinions--a typical communication system for a centralized and stratified organization. They do not believe MSDE has a symmetric communication system that is best suited for a highly professional and decentralized organization.

In the central office study, factor analysis of these 16 evaluations of the communication system produced four significant factors (with an eigen value greater than 1.0). All of the variables that measured satisfaction with the communication system loaded highly on the first factor, including symmetric communication, two way-communication, and receiving instructions in writing. The second factor was similar to the first, but it mostly distinguished symmetric from asymmetric communication. The third factor distinguished written from oral instructions. And, variables loading on the fourth factor showed a dissatisfaction because of a lack of formal feedback and a lack of two-way communication.

In the field study, factor analysis produced only three factors with an eigen value greater than 1.0, although the eigen value of the fourth factor was only slightly below (.988). Thus, four

TABLE 21
Means, Factor Scores, and Communalities
Of 16 Perceptions of the Communication System

	Mean (5-pt. Scale)			Commun. Satis. Factor	Super. Satis. Factor	Asymm. Commun. Factor	Oral Commun. Factor	Commu-nality
	Field	Cent.	Off.					
Asymmetric communication	3.58		3.44	-.22	.00	.47	-.14	.26
Symmetric communication	2.78		2.77	.49	.07	-.39	.04	.40
One-way communication	3.98		3.80	-.21	-.11	.54	-.03	.29
Two-way communication	2.48		2.66	.55	.15	-.41	.01	.44
Communication is erratic and difficult to describe	3.46		3.54	-.14	-.10	.57	.25	.32
Satisfied with communication with supervisor about performance	3.64		3.41	.15	.74	-.12	-.14	.48
Can talk with supervisor when things go wrong	4.00		3.78	.16	.81	-.09	.04	.50
Have a say in decisions that affect my job	2.86		3.15	.54	.34	-.19	.02	.42
Organization encourages differences of opinion	2.38		2.56	.67	.21	-.23	.04	.51
Supervisor encourages differences of opinion	3.08		2.97	.31	.59	-.04	-.07	.45
Am informed about policy changes that affect my job before they occur	2.99		2.91	.53	.23	-.22	-.19	.43
Receive enough information from organization to do job adequately	3.45		3.34	.44	.31	-.31	-.29	.49

TABLE 21 (continued)
Means, Factor Scores, and Communalities
Of 16 Perceptions of the Communication System

	Mean (5-pt. Scale)		Commun. Satis.	Super. Satis.	Asymm. Commun.	Oral Commun.	Commu-
	Field	Cent. Off.	Factor	Factor	Factor	Factor	nality
Receive most instructions in writing	3.08	2.63	.26	.17	.15	-.76	.46
Receive most instructions orally	3.27	3.62	.08	-.01	-.01	.65	.37
Seldom get feedback from administrators	3.16	2.94	-.20	-.09	.43	.22	.25
Most communication in organization is informal	2.94	3.10	.03	.01	.23	.53	.26
Percentage of variance explained by each factor			30%	12%	10%	6%	

factors were forced to make comparison possible. Although the factors were similar to those found in the central-office study, there were slight differences. The results of the factor analysis for the field study can be seen in Table 21.

Again, one factor described general satisfaction with the communication system. A second factor described asymmetric communication, which was the mirror image of the symmetric factor in the central-office study. The other two factors from the central-office study, the written-instructions and no-feedback factors, combined on one factor that was dominated by oral communication, informal communication, insufficient information, and communication characterized as erratic and difficult to describe. Evidently, that factor described dissatisfaction with oral communication and a desire for more written feedback about job performance. The fourth

factor in the field study, then, described satisfaction with communication with the supervisor, which probably reflected the greater amount of contact that employees have with supervisors in the field.

In the central-office study, none of the demographic variables correlated with any of the communication factors at a level of .10 or above. In the field study, however, a few small to moderate correlations appeared. The asymmetric communication factor correlated positively with education (.19) and negatively with female sex (-.10), suggesting that better-educated males see communication as more asymmetric. In addition, the oral-communication factor correlated negatively with education (-.24), positively with female sex (.11), and negatively with position in the hierarchy (-.18), suggesting that less-educated females who are in support positions are those most dissatified with the absence of written feedback about their performance.

Factor scores then were computed for each of the four communication factors for each of the four ranks in the MSDE hierarchy--support staff, first-line supervision, middle management, and top management. Few differences were found in the central-office study, although top administrators had higher scores than the other three types of employees on the factors the described communication satisfaction and symmetric communication. The pattern differed for field employees. Middle managers were happiest with communication in general and with their supervisors. They also had the lowest scores on the oral communication factor, which described a lack of written feedback. Top administrators were no more satisfied with communication than were employees in the bottom two ranks, were

most dissatisfied with their supervisors, were most likely to describe the communication system as asymmetric, and were as likely as the bottom two ranks to score highly on the oral communication lack of feedback factor.

The four communication factors then were correlated with the canonical variate scores that identified three types of field employees. In the central-office study, no correlations greater than .10 were found between the communication factors and the canonical variates. In the field study, however, the actively communicating public, the educational issues/internal communication public, was moderately satisfied with the communication system (r=.25), slightly satisfied with communication with the supervisor (r=.11), and less likely to describe the communication system as asymmetric (r=.10). The members of the the internal communication public were moderately satisfied with their supervisors (r=.21), and the job-related public was dissatisfied with the communication system (r=.21) and somewhat likely to score highly on the oral communication/absence of feedback factor (r=.11).

Tables 22 and 23, then, show the relationship between the factors measuring satisfaction with communication and the two job satisfaction factors and the four structural variables. For the central-office staff, Table 22 shows a strong pattern of correlation with both the job satisfaction factors and the structural variables. General communication satisfaction correlated strongly with both organizational and individual job satisfaction. Symmetric communication correlated especially highly with organizational job satisfaction--a relationship that probably describes the kind of communication that satisfies professionals. Receiving instructions

in writing and presence of feedback also correlated moderately with organizational job satisfaction--a pattern that probably describes the kind of communication that satisfies support staff.

Although the communication factors were slightly different for the field staff, Table 23 shows a similar pattern for that groupof employees. Organizational job satisfaction correlated especially highly with the communication satisfaction factor. It also correlated moderately with individual job satisfaction, lower than it did for the central-office staff. Satisfaction with communication with the supervisor correlated moderately with both individual and organizational job satisfaction. The asymmetric factor correlated highly with organizational satisfaction and moderately with individual satisfaction. There was also a small correlation between the oral communication factor and individual job satisfaction.

In addition, the structural variables correlated with the communication factors in a similar fashion for both groups of employees. Centralization and stratification correlated negatively with general communication satisfaction in both studies, positively with the symmetric communication factor for the central-office staff, and negatively with the asymmetric factor for the field staff. For the central-office staff, both variables correlated positively with the no-feedback factor. For the field staff, they correlated negatively with the factor that measured satisfaction with the supervisor.

Formalization correlated positively with the general communication and symmetric communication factors and negatively with the lack of feedback factor for the central-office staff. It correlated positively with the communication satisfaction and supervisor sat-

isfaction factors for the field staff and negatively with asymmetric communication and oral communication. Complexity generally did not correlate significantly with any of the structural variables, although it did correlate positively with asymmetric communication and negatively with oral communication for the field staff.

Again, these correlations show a pattern that has repeated itself throughout this report: a rigid structure produces dissatisfaction with the organization and its communication system and a desire for more autonomy and symmetric communication. The results strongly suggest that the correlation frequently found between communication satisfaction and job satisfaction (e.g., Pincus 1984) is a spurious relationship: both communication and job satisfaction are caused by the appropriateness of organizational structure. Satisfactory communication by itself cannot produce job satisfaction, but a more flexible organizational structure can produce greater satisfaction with both the organization and with communication.

TABLE 22
Correlations of Job Satisfaction and Structural Variables With Four Factors Measuring Perceptions of the Communication System For MSDE Employees Working in the Central Office

	Commun. Satis. Factor	Symmetric Factor	Written Instruct's Factor	No Feedback Factor
Individual job satisfaction	.40	.15	-.02*	-.08
Organizational job satisfaction	.39	.54	.16	-.25
Centralization	-.40	-.45	-.01*	.17
Stratification	-.28	-.38	-.05*	.16
Formalization	.22	.16	.21	-.26
Complexity of Job	-.01*	-.09	.01*	-.02*

*Not significant at $p<.05$.

TABLE 23
Correlations of Job Satisfaction and Structural Variables With Four Factors Measuring Perceptions of the Communication System For MSDE Field Employees

	Communication Satisfaction Factor	Supervisor Satisfaction Factor	Asymmetric Communication Factor	Oral Communication Factor
Individual Job satisfaction	.26	.23	-.21	.12
Organizational Job satisfaction	.52	.23	-.39	-.05*
Centralization	-.41	-.17	.27	.03*
Stratification	-.27	-.24	.21	.04*
Formalization	.14	.14	-.22	-.33
Complexity of Job	-.09	-.03*	.10	-.18

*Not significant at $p<.05$.

OPEN-END RESPONSES

The final question on the questionnaire asked the employees surveyed to write about any issues that concerned them (Table 20). Each response was analyzed and placed into one of 12 categories. In the central-office study, 48 percent of the respondents completed this question. Two categories predominated:

*Concern about salaries, promotion, and equity concerns. These concerns seemed most common among classified employees.

*Frustration with organizational structure--centralization, stratification, and lack of autonomy. The comments strongly supported the major conclusions of the study: that lack of autonomy was the primary reason for dissatisfaction with the organization and it communication system.

In the field study, fewer of the respondents completed this question: 30%. In addition, far fewer respondents made comments reflecting dissatisfaction with organizational structure, probably

because field employees have more autonomy working apart from the central office. By far the dominant category of responses reflected strong dissatisfaction with the pay scale, job classification, and opportunities for promotion by rehabilitation counselors and other field professionals and support staff.

The second largest category included all of the comments about the questionnaire itself. Most stated that the questionnaire was inappropriate because their jobs did not involve "education." Throughout these comments was an undercurrent of resentment that the questionnaire reflected a general lack of concern for the vocational rehabilitation division by MSDE leadership, apparently a feeling of alientation from the rest of the MDSE. A third category consisted of strong condemnations of some field supervisors. Taken together, these three most-frequent categories seem to suggest a serious morale problem among MSDE field employees in vocational rehabiliation and vocational-technical corrections.

TABLE 24
Summary of Open-End Responses

	Central Office		Field	
	Number	%	Number	%
Salary, promotion, equity concerns..... Great concern about state classification system and pay scale. Concern about salary, grade, RIFs, promotion.	56	24%	65	40%
Frustration with centralization, stratification, or lack of autonomy..... Employees say they are treated like children, given too little ability to participate in management or to make their own decisions.	48	21%	11	7%
General communication concerns..... Need for more information, more feedback, more communication between divisions.	21	10%	12	7%
Working conditions..... Concern with buildings, work location, heat, air conditioning, or facilities.	21	10%	12	7%
Favorable comments about the job..... Respondents who chose to say what they liked about their jobs	21	10%	4	2%
General unhappiness..... Comments suggesting that the employee is unhappy about many aspects of his or her job.	12	5%	6	4%
Comments on questionnaire..... Comments suggesting problems or limitations of the survey instrument. Field comments suggest survey reflects lack of integation of these divisions into MSDE.	12	5%	25	15%
Criticism of supervisors or supervisors.. Unfavorable comments about an employee's specific supervisor or supervisors in general.	11	5%	15	9%
Inconsistent policies for professional and support staff..... Complaints that professionals are allowed to work at home, take long lunch hours, get computer training or use comp. time, while support staff, especially secretaries, do not get the same perquisites.	10	4%	0	
Poor performance by coworkers..... Complaints about the general quality of other employees in MSDE.	9	4%	5	3%
Poor decisionmaking..... Observation that poor decisions are made by individuals or units in MSDE or that decisions cannot be made.	6	13%	4	2%
Other.....	4	2%	10	6%
TOTAL.....	231	48% of respondents	162	30% of respondents

CONCLUSIONS AND RECOMMENDATIONS

This paper reports the results of a communication audit that was conducted as the first step in the communication project called People on the Grow, a program of the Maryland State Department of Education. All central-office and field employees were surveyed to audit their communication inside the department and with people and other communication sources in other organizations and publics outside the department. The audit also related communication to employee perceptions of MSDE's organizational structure, employee job satisfaction, and employee satisfaction with the organization's communication system.

The results were almost identical for both the central-office and field staffs. Both the formal statistical analyses and the responses of employees to an open-end question provided a remarkably consistent view of the department. MSDE seems to be too rigidly structured for a complex organization with a large professional staff. In contrast to what organizational research would say is desirable, employees perceived the department as having highly centralized decision-making processes and little autonomy for employees outside top management. They also perceived MSDE as highly stratified, meaning that the department places barriers between ranks in the organization to make interaction difficult between superiors and subordinates and between people in different units of the department.

As a result of the highly structured internal environment in MSDE, employees are dissatisfied with the way the organization treats them. Centralization and stratification, in particular, correlate negatively with organizational job satisfaction. However,

employees are quite satisfied with their individual jobs, especially professionals whose jobs are more complex and interesting.

In the central office, top management employees expressed the most organizational job satisfaction and did not perceive the department to be as centralized and stratified as did other employees. In the field offices, however, middle managers were more satisfied with the organization than other employees. Middle management people in the central office, in contrast, expressed the lowest level of organizational job satisfaction and were most aware of the rigid structure.

In addition, employees saw the communication system in MSDE as one-way and asymmetric rather than two-way and symmetric. In other words, they saw that communication flows from management to other ranks and that the reason for communication is to change the attitudes and behaviors of lower ranks to be what management wants them to be. They do not see the system as one based on dialogue, whose purpose is to help employees understand each other and to change their attitudes and behavior to adapt to each other.

For both groups of employees, satisfaction with communication correlated with two-way symmetric communication and with both individual and organizational job satisfaction, but especially with organizational job satisfaction. In addition, organizational job satisfaction correlated negatively with the structural variables of centralization and stratification. The relatively rigid organizational structure in MSDE, therefore, seems to have produced dissatisfaction both with the organization and with the one-way asymmetric communication system that usually accompanies such a system.

The results of this study, therefore, provide support for in-

cluding structural variables in an audit of organizational communication. In particular, the results strongly suggest that the correlation between communication satisfaction and job satisfaction frequently found by re- searchers of organizational communication (e.g., Pincus 1984) is largely spurious. Both are effects of organizational structure.

Grunig's situational theory then was used to identify how actively employees communicate within the organizational structure and with outside media, sources, and contacts. The professional staff in particular, both in the central office and in the field, shows potential for active communication, both internal and external. The largest group of professional fits into an 'all-issues' public that would communicate about all of the educational issues studied and would be willing to learn more about communication.

Support staff members, also in both studies, fit into a public that would only communicate about direct consequences of their jobs, such as salary, benefits, promotions, and working conditions. Support staff members had little interest in communicating about educational issues and, without communication training, would not be good conduits for communicating about education outside the organization.

Another public appeared among both central-office and field employees. It consisted mostly of management people who erceived less of a rigid structure in MSDE than other employees and, apparently as a result, had a strong interest in improving internal communication. Two other publics appeared in the central-office study but not in the field study. They came from management ranks:

an apathetic public and a public whose members believe all of the issues involved them but who do not think or communicate about the issues. Both publics appear to be made up of managers who have gone stale in their jobs.

Although the analysis of publics showed that the professional staff, in particular, would communicate actively about educational issues, the level of both active and passive communication appears to be low. Although the reason is not totally clear, the low level of communication would appear to be a result of the relatively rigid structure of MSDE.

Support staff members seem eager for communication about their jobs. The open-end responses, in particular, suggest that they do not get clear instructions and get little feedback or praise. Support staff members seem to want more formalized rules and procedures and more communication about how well they are doing in their jobs. But the support staff is also highly frustrated with low pay and with the difficulty of promotion within the state personnel system.

For the communication project to succeed, the following recommendations should be considered.

1. The communication project proposes what is essentially an open, two-way symmetric system of communication. That system will not work well in a highly structured organization in which constraints rather than communication are used to coordinate employee behaviors. On the other hand, the present centralized structure discourages employees from being innovative and from communicating with others in order to gain new ideas and to help people understand the educational system and its problems.

Thus, the basic managerial system--the structure--of MSDE must be changed to make it less centralized and stratified before a two-way symmetric communication system can work. Employees at all levels, but particularly professionals, must be given autonomy to make decisions and trusted to make those decisions well. In the central-office, middle managers seem most in need of additional autonomy; in the field office, top managers seem to need it most.

2. If the system of constraints is loosened, employees then should receive communication training to help them recognize opportunities for communication, both internal and external. The absolute level of communication activity is now relatively low inside and outside the department and can be increased. Likewise, employees should be sensitized to the fact that a decentralized organization cannot coordinate its subunits effectively without frequent communication.

3. Supervisory personnel should be trained to sensitize them to the need for clear instructions and frequent feedback and praise for support personnel. Support staff members now appear to feel unappreciated and overworked, and they feel they have no mechanism for improving communication about their jobs. Members of the support staff in the field particularly seem to need more written feedback about their performance.

4. Support staff members do not seem to be an effective conduit for communicating information about educational issues and problems outside the organization. They could be made more active external communicators if they receive training to increase their problem recognition and level of involvement for the educational issues with which they work indirectly and to sensitize them to the

importance of their role as communictors to external publics.

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